

Title (en)  
PLANETARY REDUCTION ELECTRICAL MACHINE CAPABLE OF ACHIEVING FULL CLOSED-LOOP CONTROL AND ARTICULATED ROBOT

Title (de)  
ELEKTRISCHE MASCHINE MIT PLANETENUNTERSETZUNG, DIE IN DER LAGE IST, EINE VOLLSTÄNDIGE STEUERUNG IN EINEM GESCHLOSSENEN REGELKREIS ZU ERZIELEN, UND GELENKROBOTER

Title (fr)  
MACHINE ÉLECTRIQUE DE RÉDUCTION PLANÉTAIRE CAPABLE D'OBTENIR UNE COMMANDE EN BOUCLE FERMÉE COMPLÈTE ET ROBOT ARTICULÉ

Publication  
**EP 3826151 A1 20210526 (EN)**

Application  
**EP 19838871 A 20190712**

Priority  
• CN 201810791883 A 20180718  
• CN 2019095837 W 20190712

Abstract (en)  
The present invention relates to a planetary speed reduction motor capable of achieving full-closed-loop control and an articulated robot using the same. The planetary speed reduction motor is high in assembly precision and achieves high-precision full-closed-loop control. The planetary speed reduction motor mainly comprises a planetary speed reducer portion and a motor portion, and further comprises a full-closed-loop control device. The full-closed-loop control device comprises a drive shaft and a grating encoder. The grating encoder is positioned outside a motor housing and is mounted on the tail end face of the motor housing. A rotor and a sun gear of the first stage of planetary speed reduction mechanism in the planetary speed reducer are fixedly connected by interference fit. The front end of the motor housing and a speed reducer shell are directly fixed by screws. Moreover, in each stage of planetary speed reduction mechanism, at least two planetary holes in the planetary carrier have a circumferential offset relative to the position of planetary gears in the circumferential direction in order to reduce reverse gap.

IPC 8 full level  
**H02K 7/116** (2006.01); **F16H 1/32** (2006.01)

CPC (source: CN EP)  
**B25J 9/126** (2013.01 - CN); **F16H 1/28** (2013.01 - EP); **F16H 1/32** (2013.01 - CN); **F16H 1/46** (2013.01 - EP); **H02K 7/116** (2013.01 - CN EP); **H02K 11/22** (2016.01 - CN EP); **B25J 9/102** (2013.01 - EP); **B25J 13/088** (2013.01 - EP); **B25J 17/00** (2013.01 - EP); **H02K 2213/03** (2013.01 - CN EP)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3826151 A1 20210526**; **EP 3826151 A4 20220420**; CN 110739798 A 20200131; CN 110739798 B 20201110; JP 2021531442 A 20211118; JP 7160413 B2 20221025; WO 2020015590 A1 20200123

DOCDB simple family (application)  
**EP 19838871 A 20190712**; CN 201810791883 A 20180718; CN 2019095837 W 20190712; JP 2021524093 A 20190712